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aid and encouragement, we hereby extend our sincerest thanks, and we bespeak for the MONTHLY under the new organization an enlarged and potent field of future usefulness. We invite all our old friends to enlist with us in the new venture.

With kindest greetings of the season, and wishing all a Happy New Year, we remain,

Very sincerely,

B. F. FINKEL.

BOOKS.

Elementary Textbook on the Calculus. By Virgil Snyder, Ph. D., and John Irwin Hutchinson, Ph. D., of Cornell University. 8vo. Cloth Sides, Leather Back. 384 pages. Price, \$2.00. New York and Chicago: The American Book Co.

In view of the ever-increasing demand to curtail mathematical study as a pure science, for all students taking preprofessional courses, the authors of this text have endeavored to present the calculus in as simple, direct, accurate, and rigorous form as possible. They present the derivative as a limit, an idea easily grasped by the average student, and stimulate the student's interest by applications to maxima and minima, tangents, normals, etc., and they have intentionally avoided making the calculus a treatise on mechanics. The problems and illustrations are suitably chosen and well adapted to the growing mastery of the student.

F.

Important Mathematical Discoveries. Part I. Preliminary Demonstrations Leading to Equalizing of Curved Lines to Straight Lines; Part II. Perimeters and Circumferences made Equal to Straight Lines; Part III. The Trisection of an Angle; Part IV. The Quadrature and Duplication of the Cube. By P. D. Woodlock, Columbia, Mo.

The author of this little volume of 39 pages thinks he has added something new to mathematical science, and that he has settled some of those recondite questions that have baffled the mathematical geniuses of the past two thousand years. Being a resident of the home of the Missouri State University, it seems rather strange that the author has not invited a single one of the professors of that institution to confirm the accuracy of his wonderful discoveries.

F.

Practical Geometry and Graphics. By David Allan Low (Whitworth Scholar), M. I. Mech. E., Professor of Engineering, East London College (University of London). With over 800 Illustrations and over 700 exercises. 8vo. Cloth, vii + 448 pages. Price, \$2.50. New York: Longmans, Green & Co.

The field covered by this book is very wide as may be seen from the table of contents. Thus in the Introduction, the author describes some of the instruments used and defines some of the terms. Then follows treatment of the Circle; Conic Sections; Tracing Paper Problems; Approximate Solutions of Some of the Unsolved Problems; Roulettes and Glissettes; Vector Geometry; Graphic Statics; Plane Coördinate Geometry; Periodic Motion; Projection; Projections of Points and Lines; Projections of Simple Solids in Simple Positions; Changing the Plane of Projection; Planes other than the Coördinate Planes; Straight Line and Plane; Sections of Solids; The Sphere, Cylinder, and Cone; Special Projections of Plane Figures and Solids; Horizontal Projections; Pictorial Projections; Perspective Pro-

jections; Curved Surfaces and Tangents; Developments; Helices and Screws; Intersection of Surfaces; Projection of Shadows; Miscellaneous Problems in Solid Geometry; Appendix; Mathematical Tables.

The treatment of all of these subjects is very lucid, and the illustrations are very fine. This is one of the very best books we have yet seen, and will prove an inspiration and joy in the hands of the student under competent instruction. F.

The Calculus. By Ellery Williams Davis, Professor of Mathematics, the University of Nebraska; assisted by William Charles Brenke, Associate Professor of Mathematics, the University of Nebraska; and Edited by Earle Raymond Hedrick, the University of Missouri. 8vo. Cloth, xx+384 pages+63 pages of Tables. Price, \$2.00. New York: The Macmillan Co.

This book possesses a number of important features which should commend it to the interested teacher of the calculus. Among these we mention the derivation of Taylor's Series without introducing an extraneous series the reason for which always seems forced and artificial to the student; the omission of certain traditional theorems, and the inclusion of others considered essential both on mathematical and scientific grounds; and the creation of a new word, viz, the word *flexion*, which means the rate of change of the slope with respect to the abscissa. As examples of traditional theorems included in this book are Cavalieri's theorem, the prismoid formula, and the principle of least squares, given under the head of exercises in maxima and minima. The authors have used some new methods for the derivation of sine and logarithm. These methods are certainly interesting, but we have some doubts as to their pedagogical value. In our seventeen years' experience in teaching the calculus, we have always had a number of good students who for some reason had never had a course in physics. To such students, the method of setting up the fundamental principles of the calculus by borrowing ideas from some other science, as, for example, physics, was always unsatisfactory. A teacher using such a book and following the text as a guide would always have to turn aside from the calculus and give a course of two or three lectures on the composition and resolution of velocities—valuable, entertaining, and instructive, to be sure, but wholly impracticable for the teacher whose time at his disposal for the teaching of the calculus, is so very limited. Our own experience has led us to lay great emphasis on the notion of a function and the definition of a derivative, giving many simple illustrations to secure vivid ideas and then derive the derivatives of the various functions in a perfectly straightforward way. Thus

$$\frac{d}{dt}(\sin ax) = \lim_{\Delta t \rightarrow 0} \left[\frac{\sin a(x + \Delta x) - \sin ax}{\Delta x} \right] \frac{\Delta x}{\Delta t}.$$

The same may be said of the derivative of a logarithm, which method is somewhat out of the ordinary. When the fundamental principles of the calculus are once firmly established, the teacher can wander with his class into any of the closely lying fields of science with pleasure and profit to his students. We recognize, however, that here is good ground for "doctors to disagree." The book is well conceived and full of very interesting material both for students of engineering and of pure mathematics. F.

Theorie der Prym'schen Funktionen Erster Ordnung im Anschluss an die Schöpfungen Riemann's. Von Frederich Prym und Georg Rost, mit 25 Figuren im Text. 4to. Three-quarters Leather. Leipzig, Germany: B. G. Teubner.

This volume is divided into two parts. The first part, consisting of xi+250 pages, is devoted to the Foundation of the Theory of Prym's Functions, while the second part, consisting of vi+300 pages, is devoted to the System of Functions.

The first part contains seven chapters and an appendix containing four articles by Prym. The first five chapters are devoted to the integration of the partial differential equation $\Delta u = 0$, under certain limitations, while the sixth deals with the establishment and proof of the fundamental theorems of the theory, and the seventh with the establishment of the fundamental formula. F.